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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/024,321

12/14/2001

Andrew S. Dewa

TI-31434

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02/25/2005

TEXAS INSTRUMENTS INCORPORATED

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EXAMINER

PAYNE, DAVID C

ART UNIT

PAPER NUMBER

2633

DATE MAILED: 02/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/024,321

Applicant(s)

DEWA, ANDREW S.

Examiner

David C. Payne

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 December 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-35 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claim(s) 1-9, 11-18, 20, 21, 28, and 29 are rejected under 35 U.S.C. 102(e) as being anticipated by Neukermans et al. US 6445844 B1 (Neukermans).

Re claims 1-3, 9, 11, 12, 15, 16, and 20 Neukermans disclosed

A micromirror array assembly comprising: a plurality of micromirrors arranged in an array, each supported by hinges and gimbals in a frame formed in a monolithic element, and each micromirror being individually rotatable about two axes; plurality of permanent magnets, at least one permanent magnet coupled to each of the plurality of micromirrors in the array; an array of coil drivers, the coil drivers arranged into a plurality of groups, each group associated with one of the plurality of micromirrors in the array and mounted to the frame of the plurality of micromirrors so that each group of coil drivers is in proximity to the at least one permanent magnet attached to its associated micromirror; and a plurality of electrical leads, coupled to the coil drivers in the array, to receive control signals for independently controlling the rotation of each of the plurality of micromirrors, rotatable about two axis, with magnets mounted in the frame (e.g., Figure 28c, Figure 3, col./lines: 9/35-62, 35/50-65).

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Re claims 6, 8, 13, 18, 21, 28 and 29, Neukermans further disclosed modulated laser transmitters, detectors, and control circuitry. (e.g., Figure 26a, col./lines: 29/55-67, 30/1-65)

Re claim 7, 14 and 17, Neukermans disclosed lenses disposed between the transmitter and the micromirror assembly and disposed between the micromirrors and the detectors. (e.g., Figure 2, 8A, 8B, 21, 30)

Re claim 4, Neukermans disclosed a single crystal silicon structure (e.g., col./lines: 15/14-35).

Re claim 5, Neukermans disclosed a metallic coating on the mirror. (e.g., col./lines: 16/1-5)

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 22-27, and 30-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Neukermans et al. US 6445844 B1 (Neukermans).

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Re claim 26, 27, 34 and 35, Neukermans does not disclose that the device is adapted for indoor or outdoor use. However it would have been obvious to one of ordinary skill in the art at the time of invention that optical transmission and switching devices are useful for indoor and outdoor applications since communications are well known as practiced in these environments. Furthermore, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 370 F.2d 576, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 312 F.2d 937, 939, 136 USPQ 458, 459 (CCPA 1963).

Re claim 22-25 and 30-33, Neukermans does not disclose that computers lie at the endpoints of the source, destination in either a hub or multipoint fashion. However it would have been obvious to one of ordinary skill in the art at the time of invention to place the Neukermans device in a network of computers given that switches are often used to control traffic between computers in a local area network type environment.

5. Claims 10 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Neukermans et al. US 6445844 B1 (Neukermans) in view of Garverick et al. US 6543286 B2 (Garverick).

Re claim 10 and 19, Neukermans does not disclose that the control circuitry operates the coils in a time-multiplexed fashion. Garverick disclosed a control system for a MEMs switch implementation that operates under a time-multiplexed fashion (col./lines: 8/7-

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25). It would have been obvious to one of ordinary skill in the art at the time of invention to use time-multiplexed control of the switch in Neukermans since modern telecommunication switching systems are synchronous and operate with time-multiplexed protocols such as SONET.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David C. Payne whose telephone number is (571) 272-3024. The examiner can normally be reached on M-F, 7a-4p.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

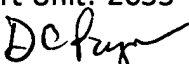
Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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